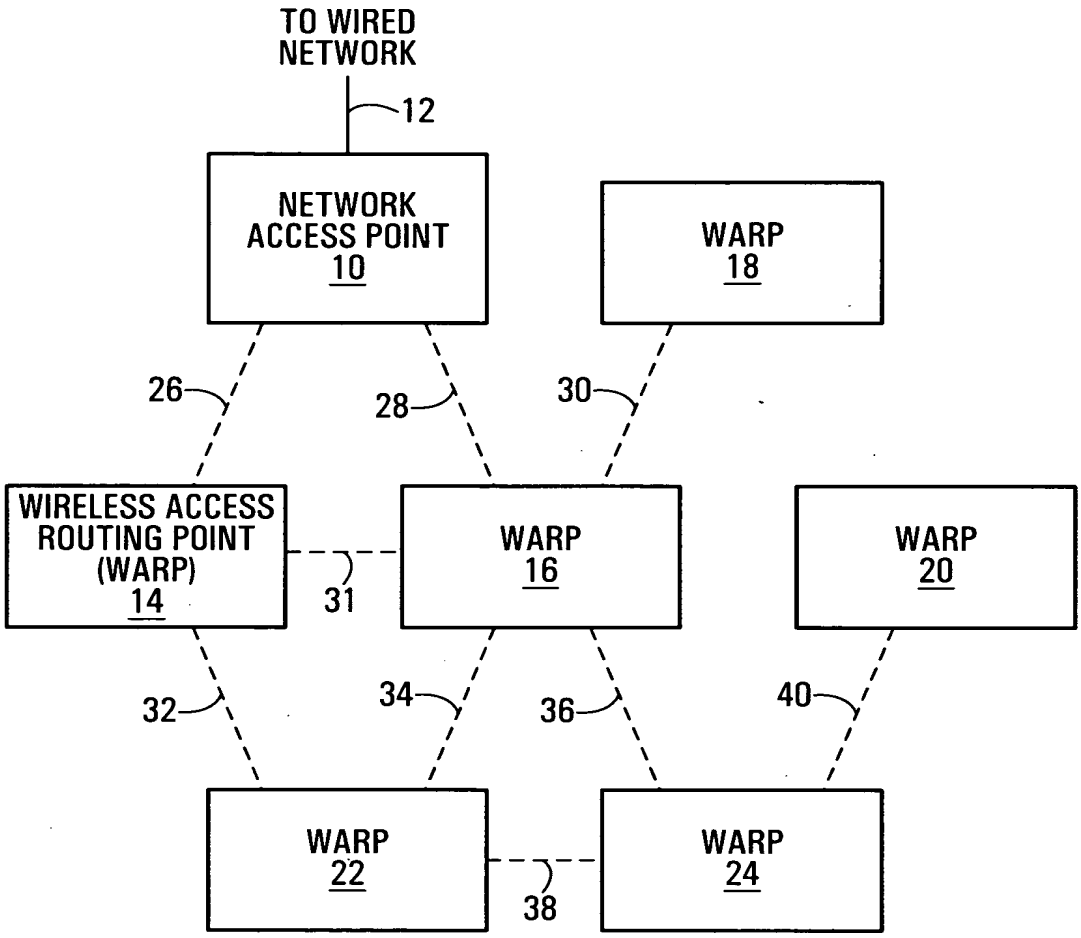
TO WIRED NETWORK
12
NETWORK ACCESS POINT 10
WARP 18
26
28
30
WIRELESS ACCESS ROUTING POINT (WARP) 14
31
WARP 16
WARP 20
32
34
36
40
WARP 22
38
WARP 24

FIG. 1

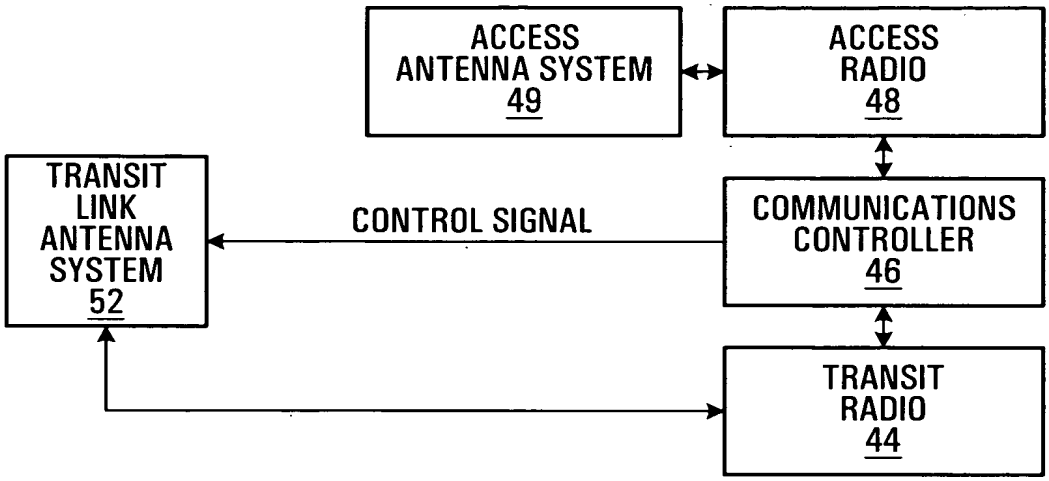
ACCESS ANTENNA SYSTEM 49
ACCESS RADIO 48
TRANSIT LINK ANTENNA SYSTEM 52
CONTROL SIGNAL
COMMUNICATIONS CONTROLLER 46
TRANSIT RADIO 44

FIG. 2

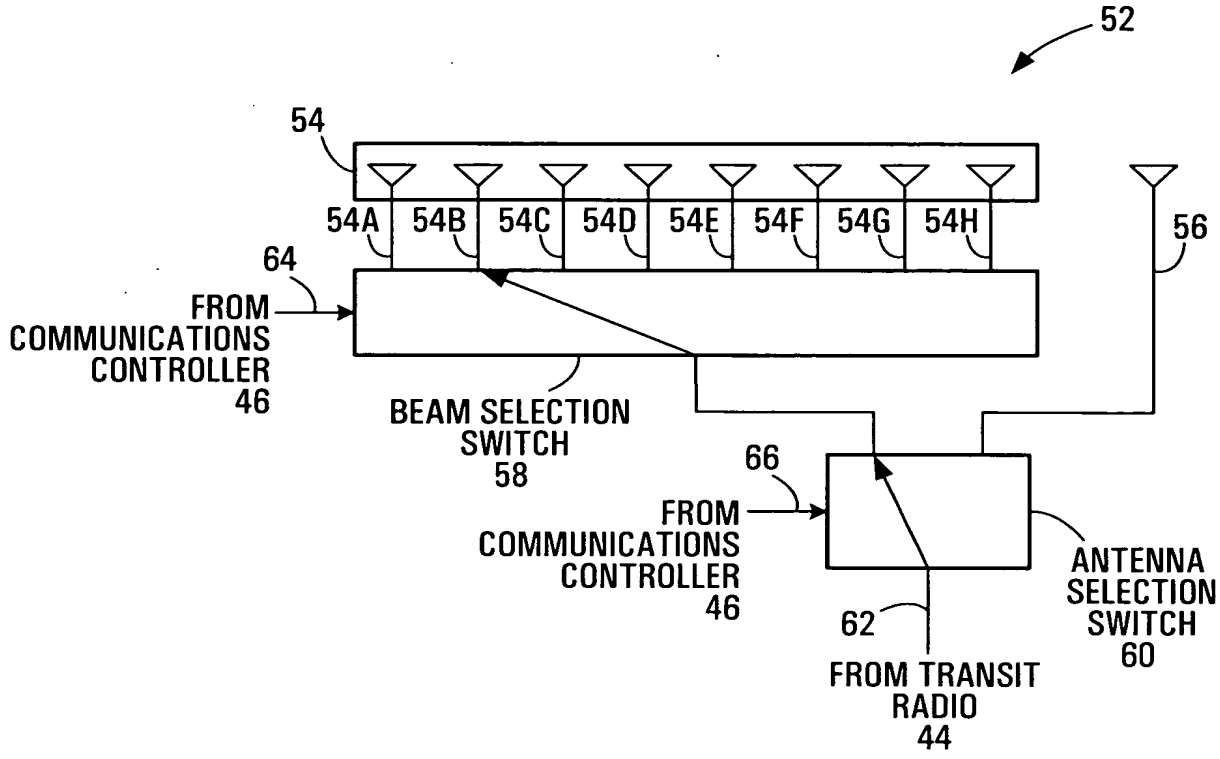
52
54
54A
54B
54C
54D
54E
54F
54G
54H
56
64
FROM COMMUNICATIONS CONTROLLER 46
BEAM SELECTION SWITCH 58
66
FROM COMMUNICATIONS CONTROLLER 46
62
FROM TRANSIT RADIO 44
ANTENNA SELECTION SWITCH 60

FIG. 3

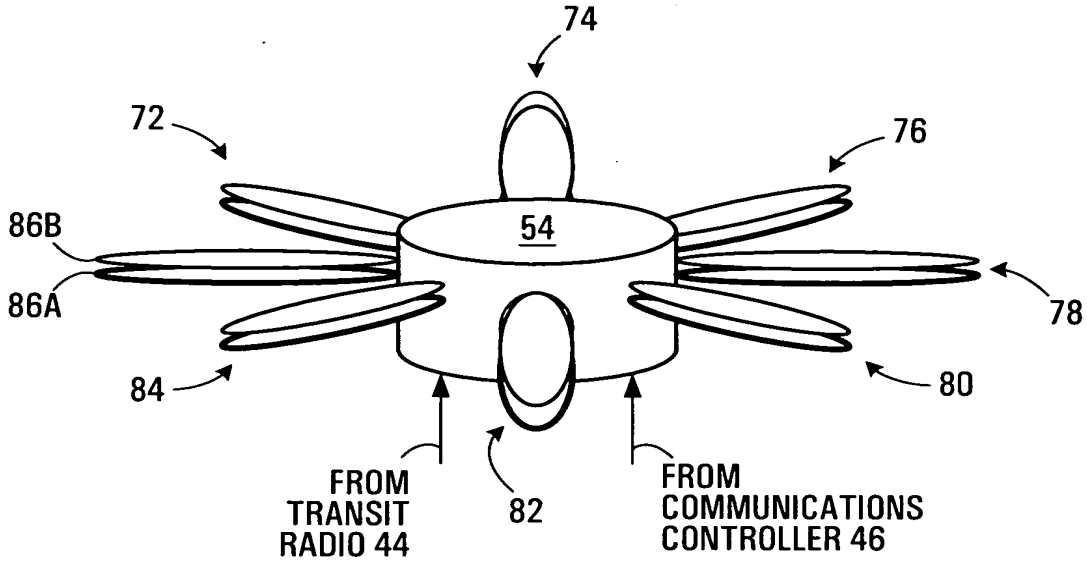
74
72
76
86B
54
86A
78
84
80
FROM TRANSIT RADIO 44
82
FROM COMMUNICATIONS CONTROLLER 46

FIG. 4

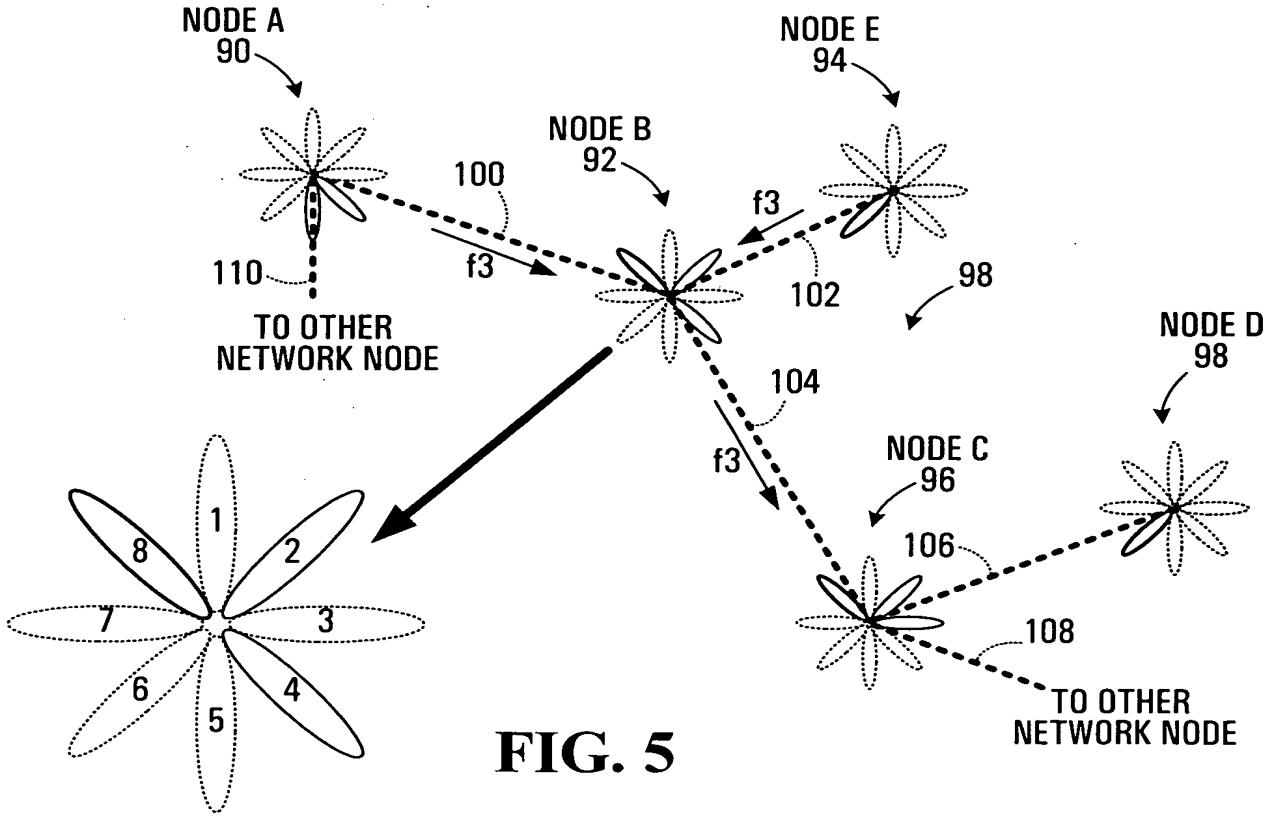
NODE A
90
NODE E
94
NODE B
92
100
f3
f3
110
102
98
TO OTHER NETWORK NODE
NODE D
98
104
f3
NODE C
96
1
8
2
7
3
106
6
4
5
108
TO OTHER NETWORK NODE

FIG. 5

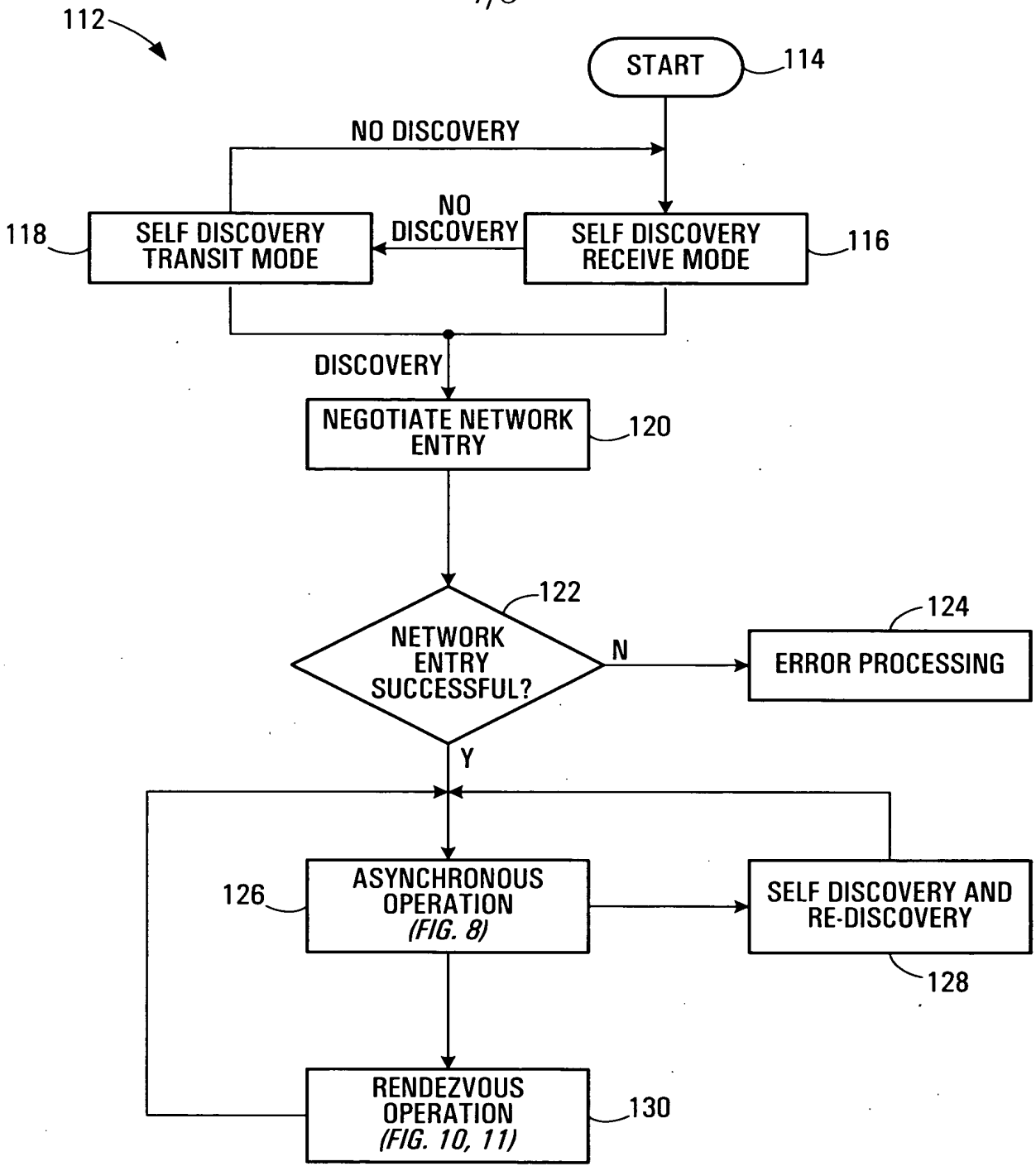
112
START
114
NO DISCOVERY
NO DISCOVERY
118
SELF DISCOVERY TRANSIT MODE
SELF DISCOVERY RECEIVE MODE
116
DISCOVERY
NEGOTIATE NETWORK ENTRY
120
122
NETWORK ENTRY SUCCESSFUL?
N
124
ERROR PROCESSING
Y
126
ASYNCHRONOUS OPERATION (FIG. 8)
SELF DISCOVERY AND RE-DISCOVERY
128
RENDEZVOUS OPERATION (FIG. 10, 11)
130

FIG. 6

NM = NEIGHBOURHOOD MODE
ACK = ACKNOWLEDGE
TM = TRAFFIC MODE
CL = CHANNEL LISTEN
REQ = REQUEST
AL = ACK LISTEN

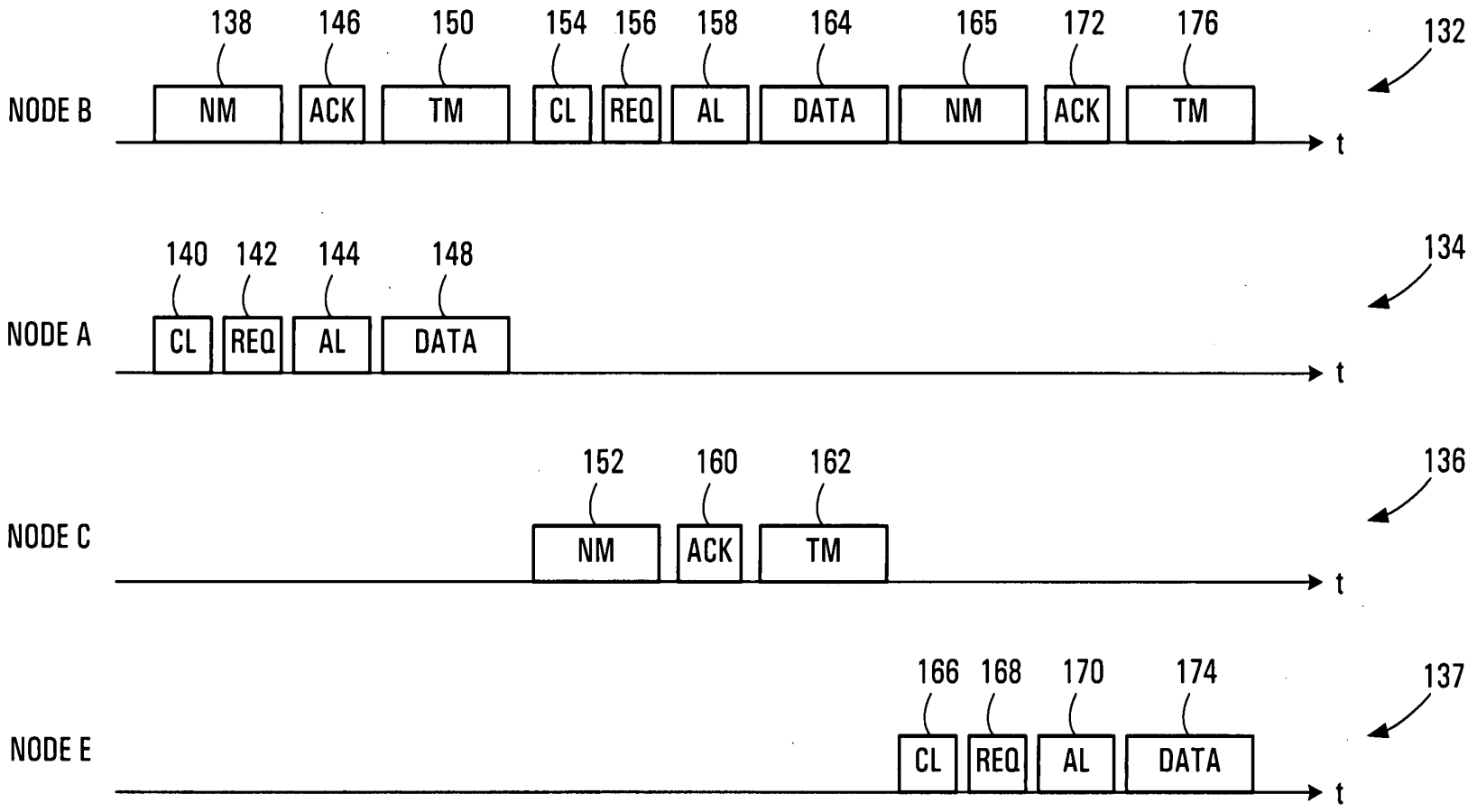

FIG. 7

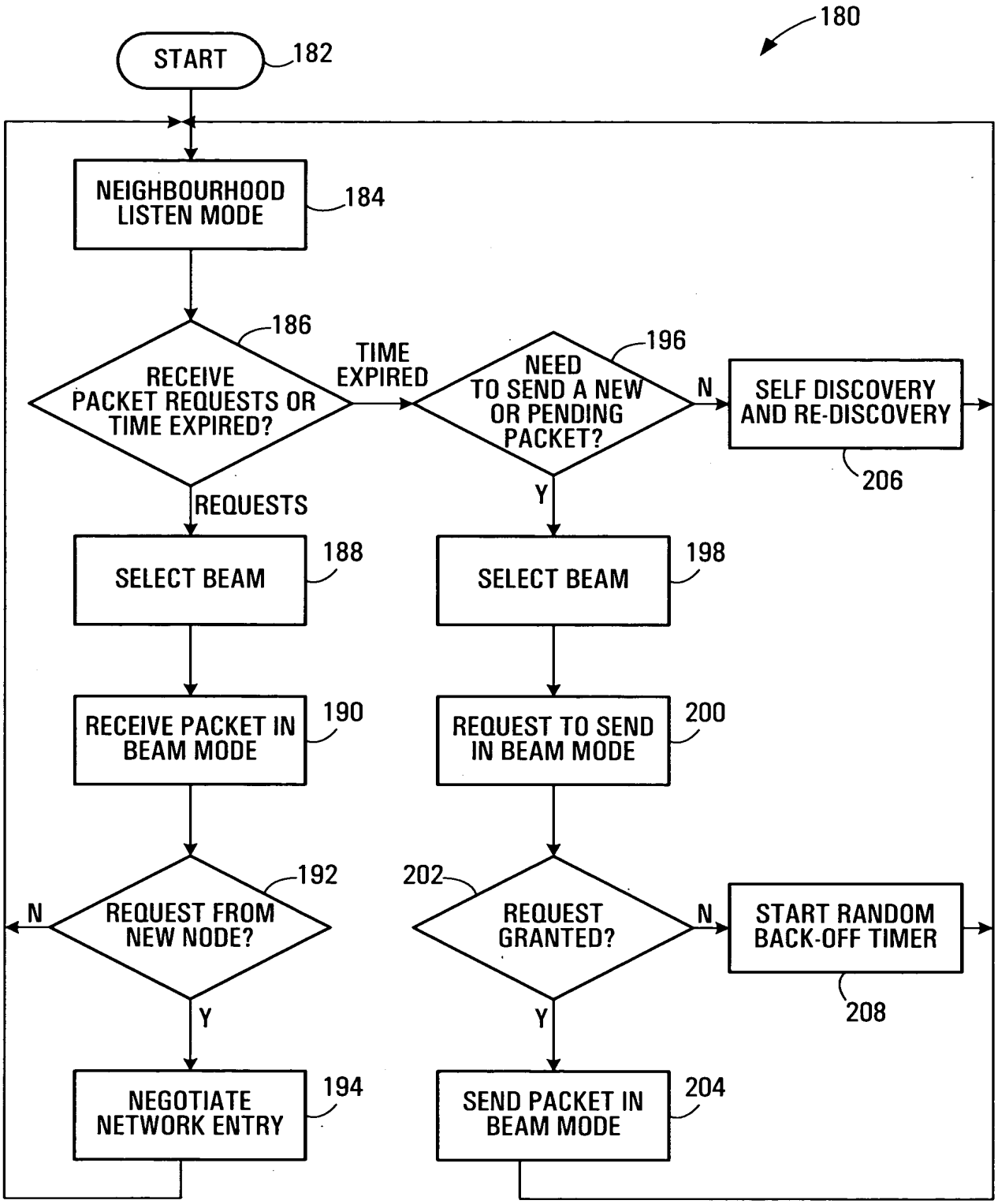
180
START
182
NEIGHBOURHOOD LISTEN MODE
184
186
RECEIVE PACKET REQUESTS OR TIME EXPIRED?
TIME EXPIRED
196
NEED TO SEND A NEW OR PENDING PACKET?
N
SELF DISCOVERY AND RE-DISCOVERY
206
REQUESTS
Y
SELECT BEAM
188
SELECT BEAM
198
RECEIVE PACKET IN BEAM MODE
190
REQUEST TO SEND IN BEAM MODE
200
192
REQUEST FROM NEW NODE?
N
202
REQUEST GRANTED?
N
START RANDOM BACK-OFF TIMER
208
Y
Y
NEGOTIATE NETWORK ENTRY
194
SEND PACKET IN BEAM MODE
204

FIG. 8

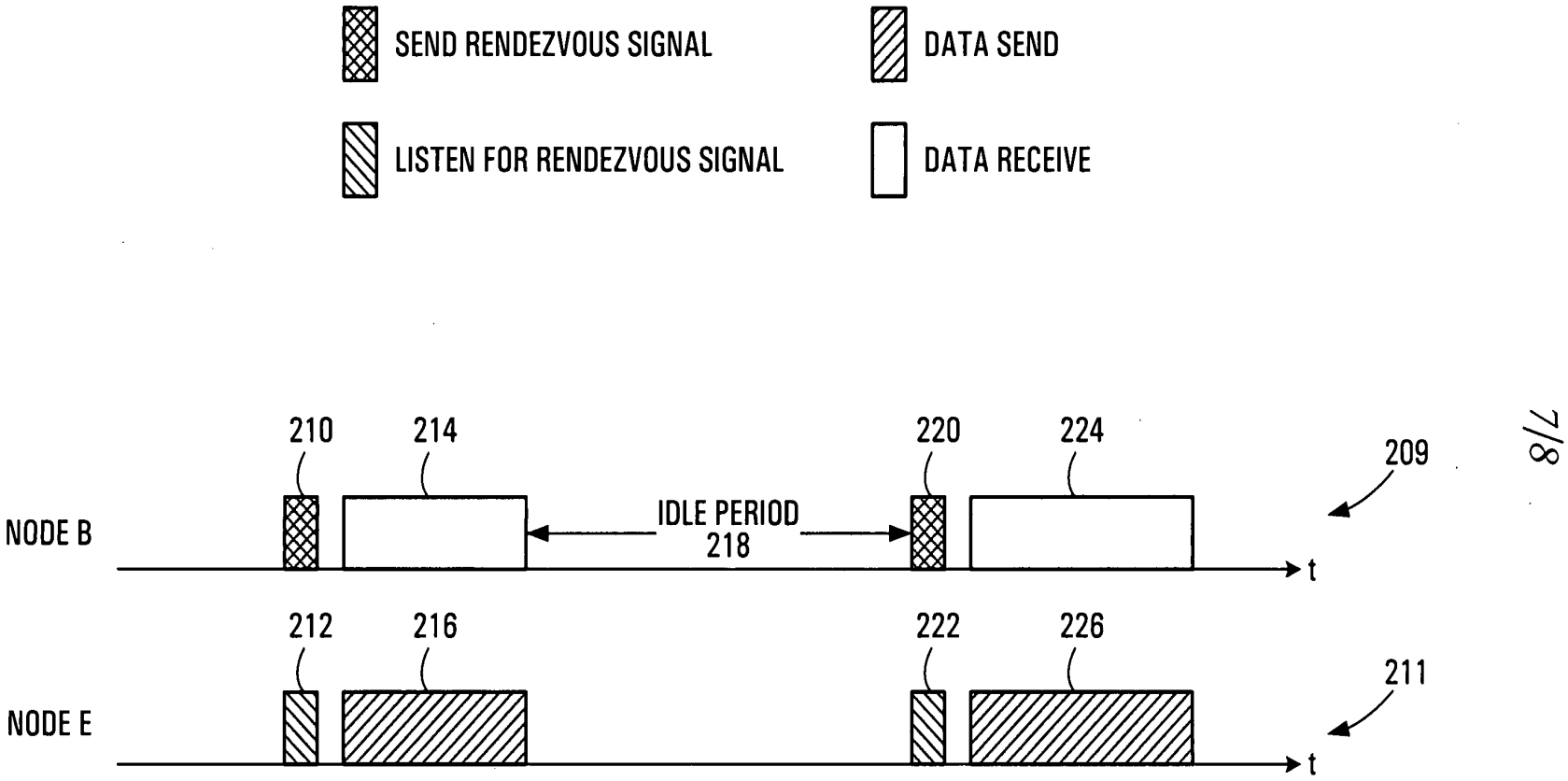
SEND RENDEZVOUS SIGNAL
DATA SEND
LISTEN FOR RENDEZVOUS SIGNAL
DATA RECEIVE
210
214
220
224
209
NODE B
IDLE PERIOD
218
t
212
216
222
226
211
NODE E
t

FIG. 9

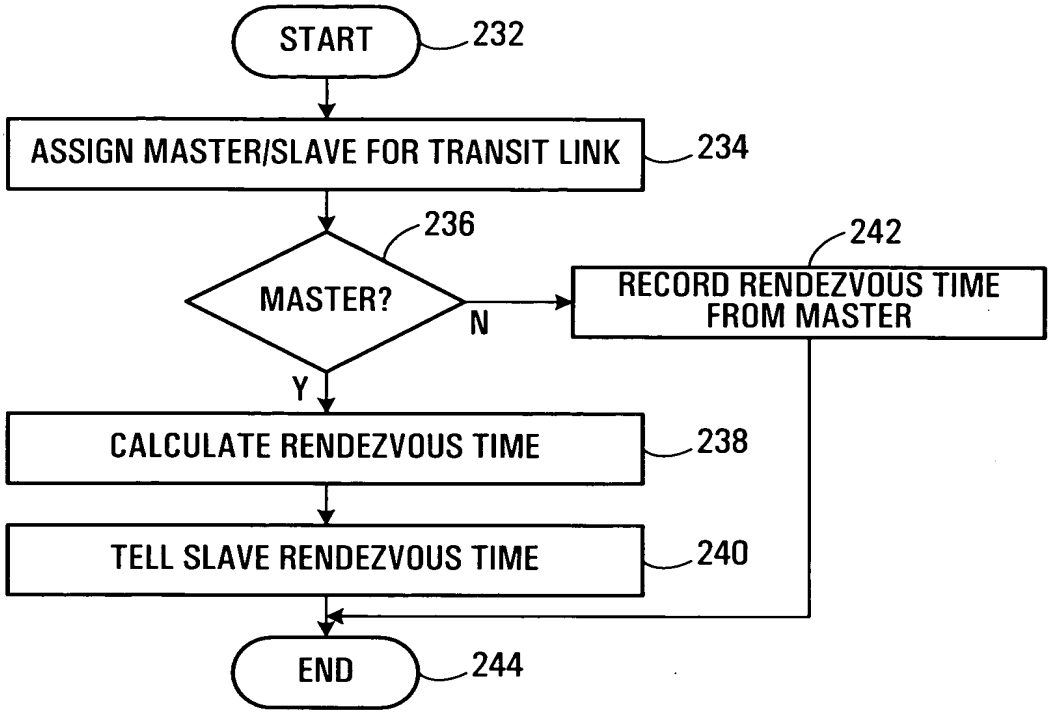
START
232
ASSIGN MASTER/SLAVE FOR TRANSIT LINK
234
236
MASTER?
N
242
RECORD RENDEZVOUS TIME FROM MASTER
Y
CALCULATE RENDEZVOUS TIME
238
TELL SLAVE RENDEZVOUS TIME
240
END
244

FIG. 10

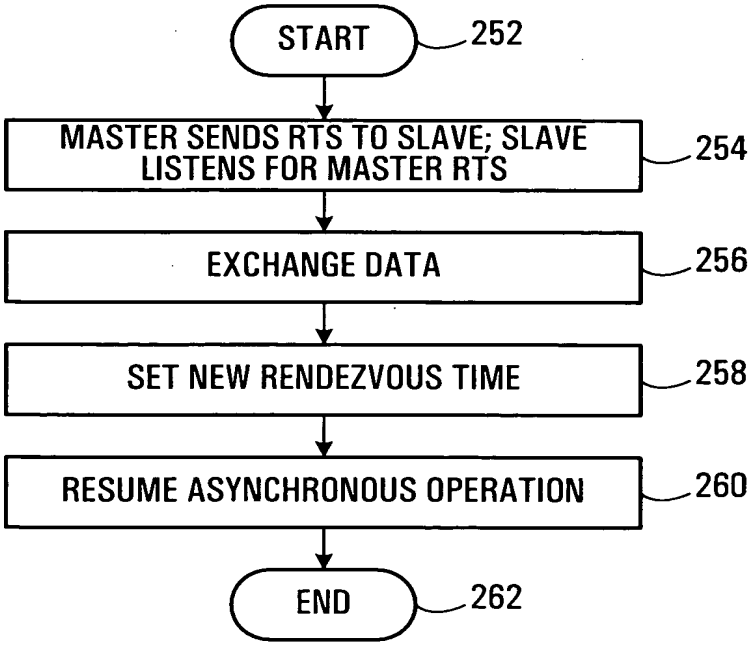
START
252
MASTER SENDS RTS TO SLAVE; SLAVE LISTENS FOR MASTER RTS
254
EXCHANGE DATA
256
SET NEW RENDEZVOUS TIME
258
RESUME ASYNCHRONOUS OPERATION
260
END
262

FIG. 11